

IN THE CLAIMS

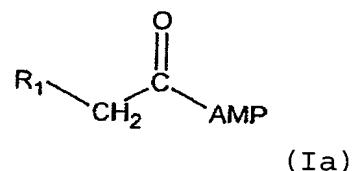
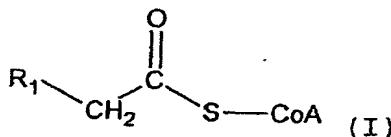
Please amend the claims as follows:

Claim 1 (Currently Amended): A purified protein, comprising characterized in that:

- a) it has at least 40% identity, over its entire sequence, with the Pks13 protein of *M. tuberculosis* (SEQ ID NO: 1); and
- b) it has an acyltransferase domain (pfam00698), a keto acyl synthase domain (pfam02801 or pfam00109), at least one acyl carrier protein domain (COG0331 or COG0304), and a thioesterase domain (COG3319 or pfam00975); wherein
- c) it catalyzes the purified protein catalyzes a Claisen condensation or malonic condensation between an acyl-CoA or acyl-AMP molecule and an acylmalonyl-CoA molecule.

Claim 2 (Currently Amended): The purified protein as claimed in of claim 1, wherein the purified protein characterized in that it catalyzes a Claisen condensation or malonic condensation between:

- a) an acyl-CoA molecule of formula I, or an acyl-AMP molecule of formula Ia:



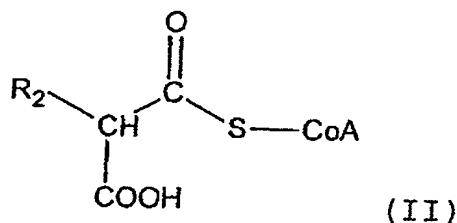
in which wherein R_1 is a chain comprising from 6 to 68 carbon atoms, which may contain comprise one or more $\text{C}=\text{C}$ double bonds, and/or one or more eis/trans cis, trans, or

cis and trans-cyclopropane rings, and/or one or more groups $\begin{array}{c} \text{CH}_3 \\ | \\ \text{CH} - \text{O} - \text{C} = \text{O} \end{array}$, or a

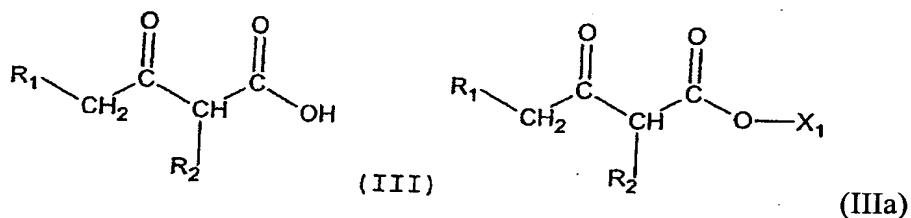
combination thereof, and/or and which may carry one or more side groups chosen selected from the group consisting of from $-\text{CH}_3$, $=\text{O}$ and $-\text{O}-\text{CH}_3$;

and

b) an acylmalonyl-CoA molecule of formula II:



in which wherein R_2 is a linear alkane comprising from 10 to 24 carbon atoms; so as to form a β -keto acyl intermediate of formula III, or a β -keto ester of formula



in which wherein R_1 and R_2 are as defined above, and X_1 is an acceptor molecule.

Claim 3 (Currently Amended): The purified protein of claim 1 as claimed in either one of claims 1 and 2, characterized in that it exhibits comprising at least 70% identity with the sequence SEQ ID No.: 1 from *Mycobacterium tuberculosis*.

Claim 4 (Currently Amended): The protein of claim 2, ~~as claimed in either one of claims 1 and 2, characterized in that it exhibits further comprising~~ at least 70% sequence identity with the sequence SEQ ID No.: 2 from *Corynebacterium glutamicum*.

Claim 5 (Currently Amended): An expression vector, ~~characterized in that it comprises comprising~~ a polynucleotide sequence encoding [[a]] the protein as claimed in any one of claims 1 to 4 of claim 1.

Claim 6 (Currently Amended): A host cell, ~~characterized in that it is transformed with [[an]] the expression vector as claimed in of~~ claim 5.

Claim 7 (Currently Amended): The host cell as claimed in of claim 6, ~~characterized in that it wherein the host cell~~ is a prokaryotic cell.

Claim 8 (Currently Amended): A method for obtaining a protein, wherein the protein comprises

- a) at least 40% identity, over its entire sequence, with the Pks13 protein of *M. tuberculosis* (SEQ ID NO: 1); and
- b) an acyltransferase domain (pfam00698), a keto acyl synthase domain (pfam02801 or pfam00109), at least one acyl carrier protein domain (COG0331 or COG0304), and a thioesterase domain (COG3319 or pfam00975); wherein
- c) the purified protein catalyzes a Claisen condensation or malonic condensation between an acyl-CoA or acyl-AMP molecule and an acylmalonyl-CoA molecule, comprising

~~as claimed in any one of claims 1 to 4, characterized in that it comprises:~~

[[-]] culturing [[a]] the host cell as claimed in either one of of claim 6 claims 6 and 7; and
[[-]] purifying said the protein from said the culture.

Claim 9 (Currently Amended): Method A method for inhibiting the biosynthesis of the a mycolata envelope in a bacterium, characterized in that it comprises comprising inhibiting, in said the bacterium bacteria, the expression or the activity of [[a]] the protein as claimed in any one of claims 1 to 4 of claim 1, thereby inhibiting the mycolata envelope biosynthesis.

Claim 10 (Currently Amended): The use of a protein as claimed in any one of claims 1 to 4, for screening for antibiotics that are active on mycolata A method of screening for an antibiotic against bacteria that must synthesize mycolic acids to be viable, comprising obtaining a transformed bacterium capable of surviving without producing mycolic acids, culturing the bacterium, on an medium comprising agar and a compound, to form colonies, and observing the appearance of the colonies, such that if the morphology of the colonies goes from a shiny smooth appearance to a rough appearance, the compound is an antibiotic.

Claim 11 (Currently Amended): The use as claimed in method of claim 10, for screening for wherein the antibiotics that are active on bacteria that must synthesize mycolic acids to be viable are mycobacteria.

Claim 12 (New): The purified protein of claim 1, wherein the purified protein catalyzes a Claisen condensation between the acyl-CoA molecule and the acylmalonyl-CoA molecule.

Claim 13 (New): The purified protein of claim 1, wherein the purified protein catalyzes a Claisen condensation between the acyl-AMP molecule and the acylmalonyl-CoA molecule.

Claim 14 (New): The purified protein of claim 1, wherein the purified protein catalyzes a malonic condensation between the acyl-CoA molecule and the acylmalonyl-CoA molecule.

Claim 15 (New): The purified protein of claim 1, wherein the purified protein catalyzes a malonic condensation between the acyl-AMP molecule and the acylmalonyl-CoA molecule.

Claim 16 (New): The purified protein of claim 2, wherein the purified protein catalyzes a Claisen condensation between the acyl-CoA molecule of formula I and the acylmalonyl-CoA molecule of formula II.

Claim 17 (New): The purified protein of claim 2, wherein the purified protein catalyzes a Claisen condensation between the acyl-AMP molecule of formula Ia and the acylmalonyl -CoA molecule of formula II.

Claim 18 (New): The purified protein of claim 2, wherein the purified protein catalyzes a malonic condensation between the acyl-CoA molecule of formula I and the acylmalonyl-CoA molecule of formula II.

Claim 19 (New): The purified protein of claim 2, wherein the purified protein catalyzes a malonic condensation between the acyl-AMP molecule of formula Ia and the acylmalonyl -CoA molecule of formula II.

Claim 20 (New): An expression vector comprising a polynucleotide sequence encoding the protein of claim 2.